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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,742	07/15/2003	Yuan Xing Lee	HITG.020PA	7041

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EXAMINER	
KAPADIA, VARSHA A	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/619,742	LEE ET AL.	
	Examiner	Art Unit	
	Varsha A. Kapadia	2627	

-- The MAILING DATE of this communication appears on the cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/15/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-12,15-23 and 26-32* is/are rejected.

7)☐ Claim(s) *3,4,13,14,24 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/15/03* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/15/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detail Action

Information Disclosure

The information disclosure statement (IDS) submitted on 07/15/03 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Rejection Under 35 U.S.C. 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the medium" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Rejection Under 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 5,7,8,10-12, 15, 17-18, 20-23, 26, 28-29 and 31-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanson (20030014708 A1).

With regards to claims 1 and 32, Hanson disclose a method for determining a size of a data block processed in a storage system (see fig.1), the method comprising steps of: detecting a characteristic of a data channel gate signal indicating a length of data (see fig.8 disclosure thereof and paragraph [0069]; determining the length of data based on the detection of the characteristic; and calculating a size of a data block in the length based on the determined length (see paragraphs [0069],[0071] and [0056]).

With regards to claim 2, Hanson disclose step of detecting the characteristic of the data channel gate signal further comprises detecting a transition of a read-gate signal and write-gate signal for indicating the last data block in the length of data (see fig.6 element 130, figs. 7-8 disclosure thereof and paragraph [0069]).

With regards to claim 5, Hanson discloses step of decoding the last data block after reading the last data block (see fig. 4 elements 208,210,212; fig.5 elements 258,260,262,264 and disclosure thereof).

With regards to claim 7, Hanson further disclose that calculating the size of a last data block further comprises calculating a modulo of the sector size and codeword size (see paragraph [0056] and [0073]).

With regards to claim 8, Hanson discloses step of decoding the last data block after reading the last data block (see fig. 4 elements 200,202,204,206; fig.5 elements 250,252,254,256 and disclosure thereof).

With regards to claim 10, Hanson disclose step of applying parity encoding/decoding on the last data block without padding additional bytes (see paragraph [0072] and fig.4 element212).

With regards to claims 11-12, 15, 17-18, 20-21, 23, 26, 28-29 and 31, the apparatus limitations recited in claims 11-12, 15, 17-18, 20-23, 26, 28-29 and 31 corresponds to the method steps recited in claims 1-2, 5, 7-8 and 10, respectively. Therefore, the rejection applied to claims 1-2, 5, 7-8 and 10 above in this office action is also applied to claims 11-12, 15, 17-18, 20-23, 26, 28-29 and 31 for the same reasons of anticipation.

With regards to claim 22, Hanson further disclose a storage controller for generating NRZ data to read/write channel for writing and receiving NRZ data from read/write channel for reading (See paragraph [0059], fig.6 and disclosure thereof).

Rejection Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 9, 16, 19, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson in view of Turk et al (6,505,320).

With regards to claims 6,9 16, 19, 27 and 30, Hanson disclose encoding and decoding the last data block including parity post-processing as described above in this office action, but fails to further specify that the encoding/decoding further comprise run-length-limited encoding/decoding schemes.

Turk et al, however disclose such encoding/decoding comprising run-length-limited encoding/decoding schemes.

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify the encoding/decoding disclosure of Hanson with the run-length-limited encoding/decoding schemes to provide encoding/decoding capability that reduce intersymbol interference and error in bit synchronizing and hence to increase Signal to noise ratio.

Allowable Subject Matter

Claims 3-4, 13-14, 24-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior art of the record fails to disclose the step of detecting the transition of the write/read-gate signal further comprises detecting a de-assertion of write/read gate signal M1 bytes before the end of a data sector being written to provide the size of the last data block (R), the size of the last data block R = MOD (K+ M1 L); where K is the determined length count number, and L is a codeword size, K+M1 is the sector size.

Prior Art Cited

Reference to Thomson et al (2003/0067699) cited as of interest.
Reference to Hanson (6,577,460) cited as of interest.

Reference to Staneck et al (2003/0002191) cited as of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A. Kapadia whose telephone number is (571) 272-7557. The examiner can normally be reached on Mon Tue and Thurs. from 6:30 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571 272 4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VK

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER